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ABSTRACT

Technological advancement in academic library resources sharing, networking, and information transfer have developed dramatically in the past decade, with institutions (including nonacademic libraries) finding themselves hard pressed to acquire the resources necessary to institute or otherwise improve their networking capabilities. Further, these new developments have posed new problems that need to be researched in depth and new alternatives that need to be tested. To assist in meeting these needs, Congress enacted the College Library Technology and Cooperation Grants Program under the Higher Education Amendments of 1986, authorizing the Secretary of Education to make four types of grants: (1) Networking Grants for institutions of higher education demonstrating a need for special assistance to participate in library networking for resource sharing; (2) Combination Grants for institutions of higher education in need of special assistance for joint use of libraries; (3) Services to Institutions Grants to assist nonacademic libraries in providing additional services to academia; and (4) Research and Demonstration Grants supporting projects that meet national or regional library needs in the utilization of technology. This collection of abstracts provides information on each of the 46 projects funded in 1988, including the name of the institution, the project director, the grant period, funding for fiscal year 1988, the grant number, and a brief description. Two appended tables present a statistical analysis of the 46 funded projects and a state breakdown of financial obligations. (SD)

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Library Programs

HEA Title II–D

College Library Technology and Cooperation Grants Program

Abstracts of Funded Projects

1988

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Office of Educational Research and Improvement
U.S. Department of Education

Library Programs

HEA Title II–D

College Library Technology and Cooperation Grants Program

Abstracts of Funded Projects

1988

June 1989

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Foreword

Technological advancements in academic library resource sharing, networking, and information transfer have developed dramatically in the past decade, with large and small institutions (including many nonacademic libraries) finding themselves hard-pressed to acquire the hardware and other resources necessary to institute or otherwise improve their networking capabilities. Further, these new developments have posed new problems which need to be researched in depth and new alternatives which need to be tested.

To assist in meeting these needs, Congress enacted the College Library Technology and Cooperation Grants Program under the Higher Education Amendments of 1986 (Title II-D of the Higher Education Act), authorizing the Secretary of Education to make four types of grants:

Networking Grants for institutions of higher education demonstrating a need for special assistance to participate in library networks for resource sharing;

Combination Grants for combinations of institutions of higher education in need of special assistance for joint-use library activities;

Services to Institutions Grants for nonacademic libraries, to assist them in providing additional services to academia; and

Research and Demonstration Grants for institutions of higher education in support of projects to meet special national or regional library needs in the utilization of technology.

Initial funding for this program was provided by Congress in fiscal year 1988. This booklet has been prepared in order to respond to requests from librarians and the general public for information about the types and kinds of projects funded in the first year of the program.

The HEA Title II-D program is managed by Frank A. Stevens, Director of the Library Development Staff; and administered by Linda Loeb, Program Officer, who wrote the abstracts. Patricia Alexander, Executive Assistant, and Zondra Carroll, Program Assistant, gathered the data and developed the manuscript. Kathy Perkinson and Judi Fries, Information Services, provided invaluable editorial work.

We trust that the information contained in this booklet provides important and useful information on academic library networking and resource sharing, and is of assistance in planning for technological implementation.

Anne J. Mathews
Director
Office of Library Programs

Preface

The College Library Technology and Cooperation Grants Program, Title II-D of the Higher Education Act of 1965, as amended, is the only Federal library program under which colleges, universities, and certain qualified nonacademic libraries can apply directly to the U.S. Department of Education and compete for library technology grants to support resource sharing and other networking activities.

The Title II-D program was enacted on October 17, 1986, under the Higher Education Amendments of 1986 and authorizes the Secretary of Education to make four distinct types of grants to encourage the development of exemplary uses of library technology. Grant funds, while primarily intended to assist in the acquisition of special equipment, may also be used for necessary network membership fees, salaries, supplies, telecommunication costs, evaluation, dissemination, and other related activities. A one-third matching requirement is a key program factor, and grants are awarded for a period of up to 3 years.

Fiscal year 1988 (September 1, 1987 - October 30, 1988) funds were first appropriated in late 1987 in the amount of $3,590,000. Because of the lateness of the appropriation, it was necessary for the program to operate under proposed rules and regulations during the first year. Those proposed regulations were published on March 21, 1988. Final regulations were published on July 18, 1988. Primarily in the interest of saving time, an innovative approach was attempted to expedite the application process—the Zippy Application Package (ZAP)—wherein all necessary rules, regulations, guidelines, application forms, and other information were published in the *Federal Register* on March 21, 1988. This process resulted in the receipt of 331 applications requesting over $25,809,648. The applications were carefully reviewed by a peer review panel, as well as program staff, and 46 projects were selected for funding. Awards were announced on September 30, 1988, with an October 1, 1988 start date.

This booklet contains program abstracts for each funded project, arranged under the four main grant categories—Networking, Combination, Services to Institutions, and Research and Demonstration. Appendix A contains a statistical analysis of

the 46 funded projects. Appendix B shows a State breakdown of financial obligations.

This publication is intended to provide basic information about the first year of program operations and inform the academic library community about trends, needs, and new approaches in the challenging and increasingly complex arena of library and information technology.

We trust that this modest effort will also provide a measure of guidance insofar as the projects described will offer solutions or alternatives to other institutions faced with similar needs.

Frank A. Stevens
Director
Library Development Staff

Linda I. Loeb
HEA Title II-D Program Officer

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Section I

Networking Grants

In fiscal year 1988, 160 applications were evaluated under this grant category and 20 awards were made totaling $1,046,776.

These grants are designed to plan, develop, acquire, install, maintain, or replace the technological equipment and software necessary to participate in library resource-sharing networks.

The Networking grants have allowed academic libraries which have not been able to allocate funds from their operating budgets to take full advantage of technological advancements in the library and information science field. Funds have been awarded for the purchase of equipment, membership fees, and associated costs for participation in national, regional, State, or local bibliographic, document delivery, and library automation networks to facilitate resource-sharing activities.

Institution	Catonsville Community College 800 South Rolling Road Catonsville, MD 21228
Project Director	Susan Hill Project Director (301) 455-4585
Grant Period	10/01/88-09/30/89
FY 88 Funding	$36,000
Grant Number	R197A80076A

Abstract

Catonsville Community College (CCC) has been invited to participate in a Statewide telefacsimile network. With Title II-D funds, they will be able to acquire the resources necessary to participate in the network and provide a model document delivery service. This will enable CCC to provide students, staff, and the community access to thousands of additional information sources from 14 other Maryland institutions within 6 working hours. In addition, CCC will begin to explore the feasibility of cooperative acquisitions networks among nearby community colleges.

The impact of this project will be to improve service to patrons, allow faculty to develop new curricula more effectively, and improve the preparedness of CCC's student population.

Institution	Daytona Beach Community College 1200 Volusia Avenue Daytona Beach, FL 32014
Project Director	Mercedes Clement (904) 255-8131
Grant Period	10/01/88-09/30/91
FY 88 Funding	$53,340
Grant Number	R197A80223A

Abstract

In 1986, Daytona Beach Community College (DBCC) and the University of Central Florida (UCF) at Daytona merged their library holdings to form one collection. In order for other UCF campuses to access the collection, DBCC is joining SOLINET/OCLC.

DBCC will first convert their current automated in-house cataloged information to MARC formats, and then enter all-new cataloged materials into SOLINET/OCLC.

This project will improve services to library users by making their bibliographic records available on OCLC to the University of Central Florida and other State and local library systems.

Additionally, DBCC will participate in the Florida Center for Library Automation (FCLA) pilot project, which will connect at least five community colleges to the FCLA system.

Institution	East Tennessee University The Sherrod Library and Medical Library Box 22, 450A Johnson City, TN 37614
Project Director	Fred P. Borchuck Director of Libraries (615) 929-6988
Grant Period	10/01/88-09/30/90
FY 88 Funding	$30,010
Grant Number	R197A80047A

Abstract

As the Online Computer Library Center (OCLC) network restructures its library services, terminal, and workstation capabilities, East Tennessee University's Sherrod Library and Medical Library, members of OCLC, will use their Title II-D grant to replace and upgrade their OCLC workstations, terminals, peripherals, and telecommunications capabilities to allow for continued and increased participation in the new, redesigned OCLC.

Institution	Guilford Technical Community College Jamestown, NC 27282
Project Director	Beverly Gass Director of Learning Resource Center (919) 334-4822
Grant Period	10/01/88-09/30/89
FY 88 Funding	$15,697
Grant Number	R197A80150A

Abstract

Guilford Technical Community College (GTCC) will use its Title II-D grant to purchase five telefacsimile machines, allowing them to bring document delivery in line with resources available through the North Carolina Information Network (NCIN). This will enable GTCC libraries to participate fully in Statewide library resource sharing and improve their services to students, faculty, and community users.

Institution	Lewis Clark State College 8th Avenue and 6th Street Lewiston, ID 83501
Project Director	Paul Krause Director of the Library (208) 799-2227
Grant Period	10/01/88-09/30/89
FY 88 Funding	$48,275
Grant Number	R197A80247A

Abstract

To support a continuing education program in a mountainous, rural area of north central Idaho and respond to an increasing number of requests by off-campus students for access to library materials, Lewis Clark State College will expand and improve library services in a five-county area of the State. By implementing online public access catalogs (OPACs) in seven strategic locations throughout the State, Lewis Clark State College will be able to increase access to their holdings, as well as the collective holdings of a library consortium which includes local, county, city, and high school collections.

This expansion will allow the college to provide adequate library support for its outreach and off-campus programs.

Institution	Mayville State University Library 330 3rd Street NE Mayville, ND 58257
Project Director	Betty J. Karaim Director of Library Services (701) 786-2301
Grant Period	10/01/88-09/30/90
FY 88 Funding	$35,757
Grant Number	R197A80238A

Abstract

Through a cooperative arrangement with the University of North Dakota libraries, Mayville State University will install an online library catalog as the initial step in the development of a Statewide automated library network. By sharing the holdings of both universities, students, faculty, and the community will be able to utilize the greatly expanded collection in a more rapid and efficient manner.

This project will provide the base for future automated functions in circulation, interlibrary loan, and serials control, and will permit the universities to link with databases in Minnesota, South Dakota, and Manitoba, Canada.

Institution	Montana State University Libraries Bozeman, MT 59717
Project Director	Kathy Kaya Principal Investigator (406) 994-5310
Grant Period	10/01/89-09/30/90
FY 88 Funding	$89,958
Grant Number	R197A80168A

Abstract

Montana State University (MSU) Libraries will use Title II-D funds to purchase equipment to extend the accessibility of MSU's CatTrac, the only automated catalog in the State of Montana.

MSU will be able to provide dial-up access to CatTrac via personal computers for decentralized on-campus users and off-site libraries, as well as to individual businesses, farmers, schools, and individual citizens, to one of the very few major library collections in the State.

Institution	Morton College Learning Resources Center 3801 South Central Cicero, IL 60650
Project Director	Wanda Johnston Director of Learning Resources (312) 656-8000, extension 320
Grant Period	10/01/88-09/30/90
FY 88 Funding	$41,134
Grant Number	R197A80167A

Abstract

Morton College's Learning Resources Center will use Title II-D funds to acquire and install the computer equipment needed to contribute their collections to the Suburban Library System's SLS/CLSI Automated Circulation Control System, a combined resource-sharing and circulation system.

This grant will result in increased and expedited access to the holdings of the 58 member libraries.

Institution	North Carolina State University Libraries Box 7111 Raleigh, NC 27695
Project Director	John E. Ulmschneider Head, Library Systems (919) 737-2339, and Jinnie Y. Davis Assistant to the Director
Grant Period	10/01/88-09/30/90
FY 88 Funding	$36,357
Grant Number	R197A80043A

Abstract

The North Carolina State University (NCSU) libraries will use Title II-D funds to upgrade its computer hardware and software, making it possible to test and implement a circulation subsystem. This will result in improved access to and enhanced information in its online catalog, thereby increasing access to information users throughout the State.

The NCSU Libraries developed its online public access catalog jointly with the libraries of the University of North Carolina at Chapel Hill and Duke University, as a cooperative project of the Triangle Research Libraries Network (TRLN). TRLN's distributed system allows users at any of the three institutions to search the databases of the other two.

Institution	Pensacola Junior College 1000 College Boulevard Pensacola, FL 32504
Project Director	Mike Whaley Systems Librarian (904) 484-2016
Grant Period	10/01/88-09/30/89
FY 88 Funding	$17,334
Grant Number	R197A80059A

Abstract

Pensacola Junior College will purchase the equipment necessary to access the Florida State University System database. Because of Pensacola's geographic isolation and lack of local library resources, it is important that they be able to access the database, the largest bibliographic database in the Southeast.

Institution	Roanoke-Chowan Community College Route 2, Box 46A Ahoskie, NC 27910
Project Director	Peggy Lefler Assistant Dean (919) 332-5921
Grant Period	10/01/88-09/30/89
FY 88 Funding	$37,118
Grant Number	R197A80149A

Abstract

Within the past 4 years, Roanoke-Chowan Community College has reclassified its library collection to Library of Congress and has fully automated its card catalog. Since they are more than 60 miles from the nearest senior-level institution, the college views library networking as a cost-effective, efficient method of providing expanded resource materials to the student population, as well as the citizens of the depressed area it serves.

With Title II-D funds, Roanoke-Chowan Community College will plan, purchase, and install the equipment necessary to participate in the North Carolina Information Network (NCIN), which will allow resource-sharing and networking activities via the North Carolina Online Union Catalog, Online Computer Library Center (OCLC) Selective Users, Western Union Easy Link, and the Telefacsimile Network.

Institution	Southern Methodist University Perkins Administration Building Dallas, TX 75275
Project Director	Carolyn Kacena Director (214) 692-3229
Grant Period	10/01/88-09/30/90
FY 88 Funding	$220,073
Grant Number	R197A80055A

Abstract

The Southern Methodist University (SMU) library collections, containing almost 750,000 bibliographic titles, represent the third-largest academic library holdings in the State of Texas. As part of their Library Automation Program, SMU plans to install the NOTIS integrated library system on campus for better internal and external access to their bibliographic collections.

Completing the library component of an intra-campus network will automatically place SMU libraries into the regional, Statewide, and national communications systems supported by Bradfield Computer Center (e.g., BITNET), for sharing information on library resources via interconnection of local library systems.

Institution	Southwestern College 100 College Street Winfield, KS 67156
Project Director	Gregory Zuck Library Director (316) 221-4150, extension 310
Grant Period	10/01/88-09/30/91
FY 88 Funding	$30,137
Grant Number	R197A80234A

Abstract

Southwestern College will install a microcomputer workstation in their Memorial Library. This will create a database file of library holdings to be shared with the system-wide CD-ROM Union Catalog. The library's CD-ROM capability will make the State's Union Catalog accessible to local users.

With this equipment, the Memorial Library will be able to participate in the Kansas Information Circuit (KIC) network.

Institution	University of Detroit Main Campus Library 4001 West McNichols Detroit, MI 48221
Project Director	Jean Houghton Assistant Director for Technical Services (313) 927-1074
Grant Period	10/01/88-09/30/90
FY 88 Funding	$125,529
Grant Number	R197A80327A

Abstract

The University of Detroit has joined DALNET, an automated library network system of eight major Detroit area libraries. Each member institution will install telecommunications equipment for accessing the joint database, as well as local-site equipment for performing internal library operations, searching the central database, and manipulating information. The Title II-D grant will fund certain DALNET membership costs and the first phase of an Online Public Access Catalog and circulation at the University's Main Library. The university expects that this project will enrich the quality of resource materials for students, faculty, and independent researchers, who will have instant access to the combined strengths of all member institutions. Academic programs will be strengthened as better library services and collections are developed.

Institution	University of Maine System Fogler Library Orono, ME 04469
Project Director	Marilyn Lutz Systems Librarian (207) 581-1658
Grant Period	10/01/88-09/30/90
FY 88 Funding	$40,454
Grant Number	R197A80326A

Abstract

The University of Maine System will create a document delivery network to connect 8 campus libraries and 11 off-campus centers using telefacsimile transmission to speed the exchange of intercampus loans.

Title II-D funds will be used to purchase 20 telefacsimile machines, which will be placed in various sites throughout the State of Maine.

Institution	Eastman School of Music University of Rochester c/o Sibley Music Library 26 Gibbs Street Rochester, NY 14604
Project Director	Joan Swanekamp Project Director (716) 275-3046
Grant Period	10/01/88-09/30/89
FY 88 Funding	$24,121
Grant Number	R197A80092A

Abstract

The Sibley Music Library at the Eastman School of Music, University of Rochester, will replace, upgrade, and add to equipment currently used to participate in OCLC networking activities, including cataloging, resource sharing via interlibrary loan, and retrospective conversion, as well as related activities involving collection development and remote searching in bibliographic databases.

Institution	University of Virginia Alderman Library Interlibrary Loans Charlottesville, VA 22903
Project Director	Douglas Hurd Interlibrary Loan Coordinator (804) 924-0507
Grant Period	10/01/88-09/30/90
FY 88 Funding	$77,000
Grant Number	R197A80160A

Abstract

As the first step toward creating a multitype (academic, public, and special) library network in Virginia, the University of Virginia's Alderman Library will use Title II-D funds to develop a telefacsimile resource-sharing network among 15 State-supported institutions of higher education.

By sending photocopies of library materials over the network, the institutions will be making same-day or next-day delivery of materials possible, making the State's rich library collections more accessible to students and researchers from institutions of all sizes around the State, and making it possible to reduce the duplication of expensive library materials. The telefacsimile network will also provide benefits to public and special libraries in Virginia and the Southeast.

Institution	Waldorf College Voss Memorial Library 106 S 6th Street Forest City, IA 50436
Project Director	Christina Cosgriff Librarian (515) 582-8108, and Oscar T. Lenning Executive Vice President
Grant Period	10/01/88-09/30/89
FY 88 Funding	$30,000
Grant Number	R197A80132A

Abstract

In order to have resource materials easily accessible, Waldorf College will use Title II-D funds to purchase the technological equipment necessary to implement a network connecting the Voss Memorial Library with local, regional, State, and national libraries. This will be done by using the Iowa Locator and Data Trek systems.

Institution	University of Montana Mike and Maureen Mansfield Library Missoula, MT 59812
Project Director	Ruth J. Patrick Dean of Library Services (406) 243-6800
Grant Period	10/01/88-09/30/90
FY 88 Funding	$30,000
Grant Number	R197A80212A

Abstract

In cooperation with Eastern Montana College, the Mike and Maureen Mansfield Library at the University of Montana is developing the Montana Business Education Consortium (MONTBEC) to improve business education programs and promote resource sharing throughout the State. With Title II-D funds, the University will lease InfoTrac CD-ROM workstations and subscribe to the General Periodicals Database.

The two libraries will cooperate to ensure that as many as possible of the journals indexed by InfoTrac are held on one campus or the other. Telefacsimile capabilities will also be provided to allow rapid transfer of materials between the campuses.

Institution	Westminster College Reeves Library Fulton, MO 65251
Project Director	William E. Marquardt Head Librarian (314) 642-3361, extension 267
Grant Period	10/01/88-09/30/91
FY 88 Funding	$22,446
Grant Number	R197A80198A

Abstract

In cooperation with William Woods College, Westminster College will purchase the equipment necessary to continue participating in the OCLC interlibrary lending network and in Missouri's new Statewide interlibrary lending system. As a result, the academic programs of Westminster and William Woods will be strengthened by expanding the clientele for the colleges' excellent interlibrary loan services.

To help achieve this goal, the interlibrary loan librarian will implement a publicity and promotion program and the reference librarian will make online database searching services more readily available. Over the 3 years of the project, Westminster and William Woods will increase access to their collections by adding holdings statements for approximately 6,000 volumes to the OCLC online database and by updating holdings statements for 700 periodical titles in the Missouri Union List of Serials database.

Section II

Combination Grants

In fiscal year 1988, 74 applications were evaluated under this category and 14 awards were made totaling $1,461,420.

These grants are designed to establish and strengthen joint-use library facilities, resources, software, or equipment.

The Combination grants have allowed academic libraries to create shared online catalogs and acquisitions programs, to strengthen existing shared systems through reconversion of records, and to establish new levels of cooperation, either regionally or through the coordination of specialized subject-area collections.

Institution	Associated College Libraries of Central Pennsylvania Hindell Library Pennsylvania State University Middletown, PA 17057
Project Director	Charles Townley (717) 948-6079
Grant Period	10/01/88-09/30/90
FY 88 Funding	$76,794
Grant Number	R197A80310B

Abstract

The Associated College Libraries of Central Pennsylvania (ACLCP) is creating a union catalog of the holdings of all its members, using CD-ROM technology. Compact disks are mastered to hold all machine-readable records from the member libraries without duplication.

Each library is receiving a CD-ROM workstation and making it available to patrons, thereby allowing access to the combined database. The union catalog is capable of much more sophisticated searching than the card catalog. In addition to searching by author/title/subject, it searches by keyword, phrase, Boolean logic, and so forth. The disks are regularly updated as accessions continue, and the workstations are also able to run Pennsylvania Access and Penn State's library database. The union catalog greatly enhances resource sharing among member libraries, as well as numerous nonmember libraries.

Institution	Bismarck State College North Dakota State Library LEND Project Capitol Grounds Bismarck, ND 58505
Project Director	Valerie Morehouse (701) 224-4658
Grant Period	10/01/88-09/30/89
FY 88 Funding	$110,000
Grant Number	R197A80100B

Abstract

Library Excellence in North Dakota (LEND) is creating a Statewide, online library catalog based upon a growing 1.6 million-record database of North Dakota library holdings, thereby avoiding the development of a series of expensive, isolated, and incompatible local systems. In addition, it provides linkage to the North Dakota State University Library online catalog and the catalogs of the Minnesota State University Library System and the South Dakota State System. LEND allows the citizens of North Dakota to participate directly in the information exchange and provides powerful new tools to the researcher. It also improves North Dakota's economic development climate by providing an information tool independent of geographic limitations.

LEND utilizes a 3-phase approach to automate the holdings of North Dakota college and university libraries. The phasing of LEND will eventually include the holdings of major public libraries, special libraries, the North Dakota State Library, the North Dakota Historical Society library, as well as other library holdings that are available in machine-readable format. Access is provided by multiple terminals within each library and other sites on campus, and to any other citizen with a microcomputer, a telephone, and a modem.

Institution	Bridgewater State College Clemency Maxwell Library Shaw Road Bridgewater, MA 02325
Project Director	Ratna Chandrasekhar (508) 697-1394, and Susan E. Cirillo Associate University Librarian (508) 999-8664
Grant Period	10/01/88-12/31/89
FY 88 Funding	$122,576
Grant Number	R197A80077B

Abstract

The purpose of the project is to increase access to the holdings and to automate the card catalogs and circulation systems of the Southeastern Massachusetts University and Bridgewater State College Libraries. In the interests of maximizing the benefits and minimizing the costs of automation, the libraries are using a common system configured to enable other libraries in the region to join it in the future. The system also enhances library resource sharing with all State institutions by providing Higher Education Communications Network (HECN) access to information on holdings and their availability. In addition, it allows library patrons to access the system from home telephones via modems mounted on the local area network at Southeastern Massachusetts University.

Institution	Houston Area Research Library Consortium University of Houston Libraries Houston, TX 77204
Project Director	Robin N. Downes Director (713) 749-4241
Grant Period	10/01/88-09/30/90
FY 88 Funding	$100,000
Grant Number	R197A80036B

Abstract

The Houston Area Research Library Consortium (HARLIC), whose member libraries hold over 9 million volumes, is creating a state-of-the-art CD-ROM Union Catalog for resource sharing among participating member libraries.

The objectives of the HARLIC CD-ROM Union Catalog Project are:

1) To improve patrons' ability to identify needed materials in the collections of all participating HARLIC libraries;

2) To increase the number of interlibrary loans among participating HARLIC libraries;

3) To increase the number of circulations of library materials to HARLIC card holders from other HARLIC libraries; and

4) To ensure that patrons and staff have continuous access to needed information by providing a backup to the online catalogs of participating libraries.

Institution	The Illinois Library Computer Systems Organization (ILSCO) University of Illinois at Urbana-Champaign 230 Main Library 1408 West Gregory Drive Urbana, IL 61801
Project Director	David F. Bishop University Librarian (217) 332-4646, and Edward Meachen ILSCO (312) 420-3425
Grant Period	10/01/88-09/30/89
FY 88 Funding	$87,265
Grant Number	R197A80276B

Abstract

This project supports the expansion of remote access to ILLINET Online, a Statewide union catalog and library resource-sharing network in Illinois. ILLINET Online consists of two components: the Statewide Library Computer System and the Full Bibliographic Record component. These automated library systems provide 29 cooperating academic libraries with local and interlibrary circulation capabilities, as well as local public access and union catalog capabilities.

The Title II-D funds are being used to install 40 dial-access ports throughout the State of Illinois. This enables the patrons of academic libraries to access ILLINET Online from personal workstations in the home or office, thereby increasing access and bringing library research capabilities directly to the patron. It also enables academic libraries which otherwise have no direct access to enjoy the benefits of a Statewide resource-sharing network.

Institution	Mid-America Law School Library Consortium, Inc. c/o Washburn University of Topeka School of Law Library Topeka, KS 66621
Project Director	John Christensen Project Chief (913) 295-6688
Grant Period	10/01/88-09/30/91
FY 88 Funding	$76,700
Grant Number	R197A80262B

Abstract

This project is designed to strengthen regional resource sharing through the development of a CD-ROM cooperative catalog among 18 university law schools in seven midwestern States. Updated monthly, the crucial element of the project is the CD-ROM disk which is contributed by each academic law library. The software and disk are configured so that a CD-ROM catalog user in Library A can enter a keyword search request for a particular author, title, or subject for items held by Library A. If the user is not satisfied with the search results for his or her own library, the holdings of the libraries in the Consortium are then searched. The user is presented with a menu of other libraries and selects one. The original (or modified) search is then matched against the second library's holdings. This process is repeated until the user is satisfied. Library staff, as well as patrons, use the CD-ROM cooperative catalog.

The Consortium plans to develop a report on this project for use by other resource-sharing groups interested in their CD-ROM experience.

Institution	Alabama Commission on Higher Education Network of Alabama Academic Libraries Suite 221 One Court Square Montgomery, AL 36197
Project Director	Sue Medina Director (205) 269-2700
Grant Period	10/01/88-09/30/89
FY 88 Funding	$89,239
Grant Number	R197A80056B

Abstract

The Network of Alabama Academic Libraries (NAAL) is a consortium of the Alabama Commission on Higher Education and 17 of the State's academic institutions that offer graduate education. The NAAL programs utilize the collective resources of the libraries to enhance Statewide education. Alabama is unique among the States in considering its total academic library resources as one research collection. NAAL is using Title II-D funds to install a Statewide telefacsimile network to improve document delivery for interlibrary loan among its members.

Institution	New England Law Library Consortium, Inc. Langdell Hall, L157 Harvard Law Library Cambridge, MA 02138
Project Director	Martha Crane Coordinator (617) 495-9918
Grant Period	10/01/88-09/30/91
FY 88 Funding	$133,159
Grant Number	R197A80156B

Abstract

The New England Law Library Consortium, Inc. (NELLCO) is committed to regional sharing of legal resources in order to provide full access to a comprehensive regional collection of legal research materials to law students and faculty throughout New England.

To provide this essential access, NELLCO is producing a CD-ROM database containing holdings information for the 16 Consortium-member libraries. The database is being used for public access, interlibrary loan, and as an aid in making collection development decisions. It provides a source for locating regionally-held legal research information needed for patrons without the high telecommunications costs associated with online searching of bibliographic databases.

Completion of the NELLCO CD-ROM Database Project will mean continuation and expansion of regional cooperative programs which are already operating successfully. Law schools throughout New England and outside the region will benefit from the production and distribution of this regional database, which can be searched without telecommunications charges. This project is an important step towards full resource sharing among NELLCO member institutions.

Institution	New Hampshire College and University Council 2321 Elm Street Manchester, NH 03104
Project Director	Douglas W. Lyon Vice President (603) 669-3432
Grant Period	10/01/88-09/30/89
FY 88 Funding	$108,525
Grant Number	R197A80289B

Abstract

This project is putting into place telecommunication equipment that allows all academic libraries in New Hampshire to access the State Police microwave communication system for the transmission of library information. Access to the microwave system means a 90 percent reduction in telecommunications costs.

New Hampshire has a sophisticated minicomputer-based NH Automated Information System that consists of four "nodes," each with its own minicomputer and LS 2000 software. Each node serves as a repository for the records of 30 to 50 multitype libraries. The problem has been that libraries located any distance from a node incur prohibitive telecommunications costs in order to access the system. Access to one of the other nodes which contains a different database is even more expensive, because the distance is greater. This project provides the necessary equipment in 14 locations around the State to allow all academic libraries, as well as public libraries, to access all parts of the NH Automated Information System through cost-effective microwave communications.

Institution	PICKLE Consortium Doane College 1014 Boswell Crete, NE 68337
Project Director	Peggy Brooks Smith Director of the Library (402) 826-8565
Grant Period	10/01/88-09/30/91
FY 88 Funding	$47,887
Grant Number	R197A80087B

Abstract

PICKLE, a consortium of nine private college libraries, is studying the use and pricing of journal titles in relation to supporting school curricula and eliminating unnecessary duplication within the consortium. Preliminary study indicates substantial savings can be made.

Each participating library is installing Group III telefacsimile machines in order to share cooperatively copies of expensive, less-used serials and journals. The economies of different communications networks will be determined.

Consortium members are developing collections cooperatively, doing in-house studies to determine those titles which will be shared. No titles issued in the last 3 years and used by a library more than five times are to be dropped by that library. Each library is keeping records in order to abide by copyright provisions.

This project will result in: immediate access to a much-larger collection of journals than any one college could hope to supply for itself; concentration of backfiles in fewer places, thus saving preservation money (for conversion to micro formats, binding) and saving space, as well as guaranteeing full runs of back issues; relief from some of the burdens of buying

publications, inflating at rates varying from 15 percent to 300 percent annually at the expense of monographs budgets; and coordinated collection development of journals to serve the independent college clientele of the nine participating colleges and any library that wishes to borrow from PICKLE.

Institution	Sweet Briar College The Tri-College Consortium of Central Virginia Sweet Briar, VA 24595
Project Director	John G. Jaffee Director of Libraries (804) 381-6100
Grant Period	10/01/88-09/30/89
FY 88 Funding	$99,046
Grant Number	R197A80199B

Abstract

The Tri-College Consortium is working on a project that will enable the three college libraries to combine the records of their holdings on a single database in CD-ROM format, updated monthly. The other objectives are:

1) to acquire and install sufficient hardware and software to create an online union catalog;

2) to improve cooperative collection development by providing the librarians with online access to all records of the combined holdings;

3) to increase user mastery of expanded search techniques made possible by CD-ROM library technology; and

4) to move toward the goal of a fully integrated automated library system for the Tri Colleges.

The plan is to combine the records of holdings of the three collections in one database, master that onto CD-ROM, acquire the hardware and software for 24 catalog stations, and place these throughout the libraries and in other campus locations.

The major benefit of the proposal is to provide access to the three collections. Additional benefits derive from the multiple access points to search the database, the teaching of sophisticated

searching strategies increasingly needed for inter- and cross-disciplinary work, and the statistical materials available from the system regarding use patterns which can be used to strengthen cooperative collection development and enable the libraries to more accurately support the educational mission.

Institution	Swarthmore College Foundations and Government Relations Swarthmore, PA 19081
Project Director	Linda G. Bills Coordinator (215) 526-5294, and Karen W. Hoover Director (215) 328-8327
Grant Period	10/01/88-12/31/89
FY 88 Funding	$174,000
Grant Number	R197A80192B

Abstract

Swarthmore, Bryn Mawr, and Haverford Colleges are engaged in a $3.1 million project to cooperatively automate their libraries. The complete project will install an integrated automated library system for the three campuses, using a single, merged database of 1 million bibliographic records to create the Philadelphia area's third-largest academic collection. The retrospective conversion of the three card catalogs is fully underway. A central computer will access the shared database to provide online public access catalog with cross-references and keyword searching, circulation, reserve room, catalog maintenance, acquisitions, serials control, electronic mail, and management statistics. The computer will be linked to terminals in the three libraries and to the Local Area Networks on each campus in a telecommunications network with a central network switch to allow port contention.

Institution	University of Tennessee, Knoxville 149 Hodges Library University of Tennessee Knoxville, TN 37996
Project Director	Linda L. Phillips Head, Science and Technology Services (615) 974-4702
Grant Period	10/01/88-09/30/89
FY 88 Funding	$108,417
Grant Number	R197A80135B

Abstract

The University of Tennessee in Knoxville and Vanderbilt University, neighboring Tennessee research libraries, have had a formal, reciprocal agreement for interlibrary lending since 1981, through which the borrowing institution is exempt from photocopy and postage charges. This project strengthens and expands existing ties between the two libraries through the design of a prototype focused on the subject areas of science, technology, agriculture, and medicine.

Efforts are underway to improve bibliographic access to collections, deliver requested materials more efficiently, and begin a program of cooperative collection development for serials in the prototype areas. Online catalogs are shared through remote access, a substantial expansion of the serials holdings list exchange presently made by the two institutions. Materials from the cooperating library are requested through interlibrary loan via telefacsimile and photocopied items returned through the same route. Book delivery is expedited with jiffy bags and UPS carrier. Materials received for faculty and graduate students are delivered to departmental offices on campus. Serial collections are enhanced through automated comparison of holdings, identification of collection strengths, and experimentation with procedures for cooperative purchasing.

Institution	University of Wisconsin System Room 372 Memorial Library 728 State Street Madison, WI 53706
Project Director	D. Kaye Gapen Dean of Libraries (608) 262-2566, and Erwin Welsh Assistant Director for Research, and Catherine Gratke
Grant Period	10/01/88-09/30/90
FY 88 Funding	$127,815
Grant Number	R197A80235B

Abstract

This project utilizes advanced facsimile equipment located in resource libraries on the Madison campus to transmit text and information to libraries that are part of the University of Wisconsin System. The enhanced interlibrary loan, document delivery, reference, and electronic mail functions depend on the transmission of digitized information over standard telephone lines. Seven powerful machines, all upgradable to G4 to make them compatible with satellite communications networks currently being developed in the State, in the Midwest, and nationally, are being put into place. The electronic mail system is to provide access to major regional and national mail networks. During the first year of the project, equipment is being selected and installed in participating libraries and new communications linkages through electronic mail established. The second year of the project will be devoted to evaluation.

Section III

Services to Institutions Grants

In fiscal year 1988, 15 applications were evaluated under this category and 3 awards were made totaling $71,743.

These grants are designed to establish, develop, or expand programs or projects that improve the grantee's service to institutions of higher education.

Funds have been awarded to nonacademic libraries to improve and expand access to materials via interlibrary loan to the institutions in their regions, to improve access to special collection indices to support the academic programs of the institutions they serve, and to train academic librarians in the use of bibliographic utilities to allow greater quality of library services at institutions of higher education.

Institution	Oak Ridge Schools PO Box 930 Oak Ridge, TN 37831
Project Director	Eleanor S. Chandler Director of Staff Development Grants/Research and Communication Services (615) 482-6319
Grant Period	10/01/88-09/30/90
FY 88 Funding	$24,997
Grant Number	R197A80118C

Abstract

This project expands the services of the Oak Ridge Schools Professional Library to instructors and postsecondary education students enrolled in five area colleges and universities. Others benefiting include Oak Ridge Schools' professional staff and citizens in the community needing educational-related materials. By implementing optical scan technology and acquiring CD-ROM databases with the accompanying hardware, the user is able to retrieve information with speed, efficiency, and comprehensiveness. The automation of library processes and the provisions of an online public access catalog also augment user services. The incredible storage capacity and easy use of this technology enhance the accession of information for all of the professional library's various patron populations.

Institution	Pittsburgh Regional Library Center Chatham College Beatty Hall 100 Woodland Road Pittsburgh, PA 15232
Project Director	H.E. Broadbent, III (412) 441-6409
Grant Period	10/01/88-09/30/91
FY 88 Funding	$21,747
Grant Number	R197A80044C

Abstract

The project enhances local, regional, and national resource sharing and improves library services at participating institutions. It does so by extending the Pittsburgh Regional Library Center's successful microcomputer and OCLC training programs to member libraries serving institutions of higher education in West Virginia, where high unemployment and a depressed economy create a special need.

OCLC has mandated retraining for the New Online System. Trainees are acquiring skills necessary to:

1) effectively retrieve records from the OCLC database for cataloging and interlibrary loan;

2) create new and enhanced records in the OCLC database for resource sharing; and

3) use microcomputers to improve library services at participating institutions.

Institution	West Virginia Library Commission Charleston, WV 25305
Project Director	Judith M. Prosser (304) 348-3978
Grant Period	10/01/88-09/30/89
FY 88 Funding	$25,000
Grant Number	R197A80204C

Abstract

The West Virginia Library Commission's online union catalog and network contain nearly 1 million bibliographic records locating 8 million items from the holdings of 26 academic institutions, 179 public, and 71 special libraries throughout the State. This project extends the network and its resources to 10 Board of Regents institutions without online access to the catalog and the attendant networking capabilities. As a result, the students, faculty, and staff of the 10 institutions have the opportunity to access the Statewide bibliographic base to locate items on the system and to communicate with libraries on the network. They have 24-hour service on a completely integrated, interfaced system built upon standardized software and hardware. This project is facilitated through linkage of an existing Board of Regents network—WVNET—to the Northern Tier of the Commission's network.

Section IV

Research and Demonstration Grants

In fiscal year 1988, 53 applications were evaluated and 9 awards were made, totaling $1,010,061.

These grants are designed to allow research or demonstration projects to meet specialized national or regional needs in utilizing technology to enhance library and information sciences.

Funds have been awarded in three major areas of study:

1) *Computer Assisted Instruction Projects.* These projects will develop methods to raise the level of computer competence among library users, to instruct users on alternate computerized information databases, and to measure the impact of computer-assisted user instruction programs on the academic performance of the students.

2) *Current Technology Impact Studies.* These projects are analyzing and evaluating the effects of library technology currently in use. The projects are also measuring the variables involved in utilizing library technology, including cost factors, effects on users and staffs, and the feasibility of expanding the current system for different uses.

3) *Advance Systems Design.* These projects are developing advanced information gathering and analysis systems which will increase productivity for researchers and improve interlibrary loan functions for resource-sharing networks.

Institution	University of Alabama Libraries PO Box 870266 Tuscaloosa, AL 35487
Project Director	Frances Benham Associate Dean of Libraries (205) 348-5569
Grant Period	10/01/88-12/31/89
FY 88 Funding	$84,545
Grant Number	R197A80299D

Abstract

The objectives of this project are to develop comparative research data on two library instruction methods (the traditional orientation lecture/tour and an intensive course-integrated instruction designed to develop skills in the use of print and automated information sources such as CD-ROM and end-user online searching) in order to:

1) improve student skills in collecting information efficiently and effectively;

2) improve student skills in evaluating material critically;

3) improve student skills in communicating effectively through writing; and

4) evaluate a methodology for the assessment of library instruction.

Undergraduate engineering students in a technical writing course are receiving the two methods of library instruction described. Evaluation will focus on bibliographies produced as part of the requirement of a term paper for the course.

Institution	University of Alaska 3211 Providence Drive Anchorage, AK 99508
Project Director	Jack O'Bar Director (907) 786-1825
Grant Period	10/01/88-09/30/89
FY 88 Funding	$101,622
Grant Number	R197A80281D

Abstract

This project involves the installation of eight new telefacsimile-microcomputer-linked equipment units at seven locations across Alaska. These installations will demonstrate, for evaluation, the use of this technology in conjunction with the University of Alaska Computer Network and for purposes of resource sharing by the University of Alaska Library. The project is running for 2 years, with the possibility of extending into a third year, if the funds permit.

Throughout the project, personnel from the University of Alaska at Anchorage (UAA), Office of Information Technology, are installing and maintaining equipment, as well as instructing users. Students are also helping to operate equipment at the UAA Library.

Institution	Cornell University A.R. Mann Library Ithaca, NY 14853
Project Director	Jan Olsen (607) 255-2285, and Katherine Chiang Computer Files Librarian (607) 255-2199
Grant Period	01/01/89-12/30/89
FY 88 Funding	$153,866
Grant Number	R197A80324D

Abstract

Mann Library, the land-grant library of the life sciences and agriculture at Cornell University, is designing and implementing a computer system to provide interactive, online access through the campus telecommunications network to the data files of broadest utility in the biological and agricultural sciences. Library technical staff are using front-end software, designed to meet the needs of the researcher, that allows the end-user to identify data sets pertinent to particular research topics, to extract these data sets, and to format them for comparisons and analyses of the data. The library is training researchers to use the system, and will evaluate the ways in which they use it and how it affects their work. Once the system is developed, the library will conduct tests, including tests performed by researchers. When the system has been thoroughly tested at Cornell and enhanced to the point where it meets a spectrum of user needs, Mann Library will work with Cornell Computer Services to provide access to the data files system through regional and national telecommunication networks.

Institution	Drexel University College of Information Studies Philadelphia, PA 19104
Project Director	Thomas A. Childers Project Director (215) 895-2479, and Belver C. Griffith Co-Principal Investigator (215) 895-2474
Grant Period	10/01/88-09/30/91
FY 88 Funding	$102,643
Grant Number	R197A800297D

Abstract

The College of Information Studies at Drexel University is doing research in conjunction with the Tri-College Library Automation Project, a collaboration of three colleges (Bryn Mawr, Haverford, and Swarthmore) to integrate their library resources and expand their capability to serve their communities. (These institutions have received a Joint Use Grant under the same program, described on page 38 of this book.) The research involves all aspects of the integration and its implementation through advanced computing and communication technologies, and it is designed to measure the effects on users and staff, on the quality of collections and services, and on the three organizations.

Institution	The George Washington University Gelman Library 2130 H Street NW Washington, DC 20052
Project Director	Patricia M. Kelly Assistant University Librarian for Programs and Services (202) 994-6455
Grant Period	10/01/88-09/30/90
FY 88 Funding	$89,438
Grant Number	R197A80063D

Abstract

The Consortium Loan Services is designed to facilitate and expand the sharing of library resources through technological applications and cooperative arrangements to a large and diverse clientele. Major features of the system are end-user downloading of records from an online catalog, system selection of lending libraries, and automated generation of information needed to monitor system and library performance. The George Washington University is administering the project. Technical development and programming will be done under contract by George Mason University. All of the Consortium members are participating in project design and demonstrations. The project is funding the purchase of hardware, as well as research and demonstration of technical requirements. The Consortium Loan Service will serve as a model for cooperative loan services for other consortia.

Institution	University of Michigan Libraries Ann Arbor, MI 48109
Project Director	Yvonne Wulff Assistant Director for Collection Management (313) 764-9356
Grant Period	10/01/88-09/30/89
FY 88 Funding	$77,652
Grant Number	R197A80272D

Abstract

This project is investigating the ability of a major research library to deliver rapidly, by telefacsimile, materials requested by faculty from remote divisional libraries and locations external to campus. It is anticipated that this level of service may, in turn, develop the local faculty support necessary to make cooperative collection development programs politically feasible.

Institution	Ohio State University Libraries 1858 Neil Avenue Mall Columbus, OH 43210
Project Director	Virginia Tiefel Librarian (614) 292-6151
Grant Period	10/01/88-09/30/89
FY 88 Funding	$117,558
Grant Number	R197A80071D

Abstract

The Ohio State University (OSU) Libraries system is expanding and extending a project initially undertaken as a 3-year grant from the Fund for the Improvement of Postsecondary Education to help develop a prototype program to teach and guide students in the application of information search strategies, using an online public catalog and computerized and print reference sources. The program functions as a microcomputer "front end" to the Libraries' mainframe catalog, so that each time users begin to search the catalog, the microcomputer program offers a comprehensive search strategy option to lead them through information sources beyond the catalog. The microcomputer program functions also as an online "bridge" to other computer-based systems, enabling users to apply major elements of a search strategy process by gaining ready access to the test of relevant CD-ROM-based journal indexes, encyclopedia articles, and print sources. This project is reaching approximately 2,000 students in its prototype stage, with the potential for reaching all searchers of the online catalog (from among 54,000 students on Ohio State's Columbus campus) annually by 1990. The project, which is being termed the Ohio State University Libraries' "gateway," is applicable in meeting basic library and information user needs, and will be transferable for use in libraries in almost every postsecondary institution and most public libraries.

Institution	Rutgers University School of Communication, Information, and Library Studies 4 Huntington Street New Brunswick, NJ 08903
Project Director	Nicholas Belkin (201) 932-8017, and Tefko Saracevic (201) 932-8017
Grant Period	10/01/88-09/30/90
FY 88 Funding	$106,987
Grant Number	R197A80263D

Abstract

The aim of the project is to provide a set of principles, guidelines, and desirable features for the design of third-generation Online Public Access Catalogs (OPACs) and for improvements of existing OPACs, based on users and their information-seeking behavior in the library.

The objectives are to:

1) analyze and model the information-seeking behavior of different types of library users in different types of libraries in approaching and searching an OPAC;

2) analyze and model library use outside of OPAC (i.e., non-OPAC users) and relate OPAC use within the framework of total access to and use of a library collection;

3) relate the OPAC use and the whole library collection use to a variety of measures representing degrees of success and failure and derive a typology of patterns; and

4) synthesize the findings in the form of a set of design principles, guidelines, and desirable features for OPACs, which relate human behavior to technological capabilities.

The project is following recommendations from a number of studies and authors calling for OPACs to be designed starting with humans and their use behavior, rather than starting with technology and records.

Methodology consists of studying real use of real OPAC users in two different environments with two different OPACs. The information-seeking behavior is being analyzed in relation to three distinct processes:

1) searching of OPAC for information on items in the collection;

2) searching of the collection itself without OPAC; and

3) locating desired items and closure.

For each, there will be an analysis of:

1) the actual record of the search process;

2) commentary by the user and an observer; and

3) failures, as determined by the user and an observer.

Institution	State University of New York, Buffalo Poetry/Rare Books 420 Capen New World Hall Buffalo, NY 14260
Project Director	Robert J. Bertholf (716) 636-2917
Grant Period	12/01/88-05/30/91
FY 88 Funding	$175,746
Grant Number	R197A80197D

Abstract

This project is setting up controlled tests to evaluate the use of facsimile copies or scanner-generated, machine-readable files in lieu of the actual items or photocopies that are now sent via the commercial or locally controlled mail service routes used for interlibrary loan and campus information delivery systems.

Aspects under study are:

1) direct and associated costs;

2) turn-around times;

3) training needed; and

4) end-user acceptance.

Three different tests involving the transmission of information are being run over a 2½ year period to provide data, from which conclusions will be drawn.

Appendix A

Analysis of HEA Title II-D awards: Fiscal year 1988

Purpose		Funding granted
Total	46	$3,590,000
Networking	20	1,046,776
Combination	14	1,461,423
Services to institutions	3	71,744
Research and demonstration	9	1,010,057
Geographic spread		
26 States		
Regional dispersion		
Total	46	
New England	4	
Northeast	8	
Southeast	13	
Midwest	11	
Southwest	4	
Mountain	4	
Northwest	1	
District of Columbia	1	
Type of library or organization		
Total	46	
University	[1] 21	
College	9	
Community college	3	
Junior college	1	
Technical college	1	
Consortia	7	
Commission on Higher Education	1	
Library Commission	1	
Multitype library network	2	

Analysis of HEA Title II-D awards: Fiscal year 1988—Continued

Range of grants	
Low of $15,697-High of $220,073	
Mean grant award (X)	$78,043
Median	$77,326
Range most frequently funded	$30,000-$39,000

[1] Including 2 graduate library schools.

Distributed

Range	Frequency
Total	46
$ 10,000-19,000	2
20,000-29,000	5
30,000-39,000	8
40,000-49,000	4
50,000-59,000	1
60,000-69,000	0
70,000-79,000	4
80,000-89,000	5
90,000-99,000	1
100,000-109,000	6
110,000-119,000	2
120,000-129,000	3
130,000-139,000	1
140,000-149,000	0
150,000-159,000	1
160,000-169,000	0
170,000-179,000	2
180,000-189,000	0
190,000-199,000	0
200,000-209,000	0
210,000-219,000	0
220,000-229,000	1

Appendix B

HEA Title II-D college library technology obligations: Fiscal year 1988

State	1981 obligations	Number of grant awards
Total	$3,590,000	46
Alabama	173,784	2
Alaska	101,622	1
Arizona	0	0
Arkansas	0	0
California	0	0
Colorado	0	0
Connecticut	0	0
Delaware	0	0
District of Columbia	89,438	1
Florida	70,674	2
Georgia	0	0
Hawaii	0	0
Idaho	48,275	1
Illinois	134,399	2
Indiana	0	0
Iowa	30,000	1
Kansas	106,873	2
Kentucky	0	0
Louisiana	0	0
Maine	40,454	1
Maryland	36,000	1
Massachusetts	255,735	2
Michigan	203,181	2
Minnesota	0	0
Mississippi	0	0
Missouri	22,446	1
Montana	119,958	2
Nebraska	47,887	1
Nevada	0	0
New Hampshire	108,525	1
New Jersey	106,987	1
New Mexico	0	0
New York	353,733	3
North Carolina	89,172	3

HEA Title II-D college library technology obligations: Fiscal year 1988—Continued

State	1981 obligations	Number of grant awards
North Dakota	$145,757	2
Ohio	117,558	1
Oklahoma	0	0
Pennsylvania	375,184	4
Rhode Island	0	0
South Carolina	0	0
South Dakota	0	0
Tennessee	163,424	3
Texas	320,073	2
Utah	0	0
Vermont	0	0
Virginia	176,046	2
Washington	0	0
West Virginia	25,000	1
Wisconsin	127,815	1
Wyoming	0	0
American Samoa	0	0
Guam	0	0
Puerto Rico	0	0
Marshall Islands	0	0
Virgin Islands	0	0
Micronesia	0	0
No. Mariana Islands	0	0
Palau	0	0

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